

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) An apparatus for manufacturing nano-carbon, comprising:
 - a target holding unit which has a contact surface being in contact with a surface of a graphite target and movably holds said graphite target by frictional force generated between the contact surface and said surface of said graphite target;
 - a light source which irradiates light to said surface of said graphite target;
 - a moving unit which drives said target holding unit so as to move said graphite target held by said a target holding unit relatively to said light source, to move an irradiation position of said light on said surface of said graphite target, and to move said graphite target by the frictional force generated between said contact surface and said surface of said graphite target; and
 - a recovery unit which recovers nano-carbon obtained from said light irradiation.
2. (Original) An apparatus for manufacturing nano-carbon, comprising:
 - a target holding unit which has a contact surface being in contact with a surface of a cylindrical graphite target and movably holds said graphite target by frictional force generated between the contact surface and said surface of said graphite target;
 - a light source which irradiates light to said surface of said graphite target;

a moving unit which drives said target holding unit so as to move said graphite target held by said target holding unit relatively to said light source, to move an irradiation position of said light on said surface of said graphite target, and to rotate said graphite target around a central axis by the frictional force generated between said contact surface and said surface of said graphite target; and

a recovery unit which recovers nano-carbon obtained from said light irradiation.

3. (Original) The apparatus for manufacturing nano-carbon as set forth in claim 2, wherein said target holding unit has two cylindrical rollers which have rotation axes substantially parallel to said central axis of said graphite target and hold said graphite target between positions parallelly disposed each other; and

said moving unit rotates said graphite target around said central axis by said frictional force generated between said contact surface of said roller and said surface of said graphite target by rotating said roller around said rotation axis.

4. (Original) The apparatus for manufacturing nano-carbon as set forth in any one of claims 1 to 3,

wherein said moving unit drives said target holding unit so that the irradiation position of said light irradiated to said surface of said graphite target covers over almost the entire area of said surface of said graphite target.

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5. (Currently Amended) The apparatus for manufacturing nano-carbon as set forth
in any one of ~~claims 1 to 4~~ claims 1 to 3,

wherein said moving unit is configured so as to move said irradiation position
while maintaining an irradiation angle of said light substantially constant, at the irradiation
position of said light on said surface of said graphite target.

6. (Currently Amended) The apparatus for manufacturing nano-carbon as set forth
in any one of ~~claims 1 to 5~~ claims 1 to 3,

wherein said target holding unit comprises one of stainless steel or ceramics,
alternatively a metal deposited with carbon on a surface.

7. (Currently Amended) The apparatus for manufacturing nano-carbon as set forth
in any one of ~~claims 1 to 6~~ claims 1 to 3,

wherein said nano-carbon is carbon nano horn assemblies.

8. (Original) A method of manufacturing nano-carbon, comprising:
irradiating light to a surface of a graphite target; and
recovering nano-carbon generated in said irradiating light,

wherein said irradiating light includes irradiating said light while holding said graphite target by a contact surface disposed in contact with said surface while moving said graphite target by frictional force between said surface and said contact surface.

9. (Original) A method of manufacturing nano-carbon, comprising:
irradiating light to a surface of a cylindrical graphite target while rotating said graphite target around a central axis; and
recovering nano-carbon generated in said irradiating light,
wherein said irradiating light includes irradiating said light while holding said graphite target by a contact surface disposed in contact with said surface and while rotating said graphite target around the central axis by frictional force between said surface and said contact surface.

10. (Original) The method of manufacturing nano-carbon as set forth in claim 9,
wherein said contact surface is disposed in contact with a side surface of said graphite target.

11. (Original) The method of manufacturing nano-carbon as set forth in any one of claims 8 to 10,
wherein, in said irradiating light to the surface of said graphite target, said light is irradiated so as to cover over almost the entire area of said surface of said graphite target while moving the irradiation position of said light.

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12. (Currently Amended) The method of manufacturing nano-carbon as set forth in
any one of ~~claims 8 to 11~~ claims 8 to 10,

wherein, in said irradiating light, said light is irradiated so that the irradiation
angle of said light to said surface of said graphite target is substantially constant.

13. (Currently Amended) The method of manufacturing nano-carbon as set forth in
any one of ~~claims 8 to 12~~ claims 8 to 10,

wherein said irradiating light includes irradiating a laser beam.

14. (Currently Amended) The method of manufacturing nano-carbon as set forth in
any one of ~~claims 8 to 13~~ claims 8 to 10,

wherein said recovering nano-carbon includes recovering carbon nano horn
assemblies.